Mikaela Angelina Uy

Gates Computer Science, Rm 239
Stanford, CA 93405

Email: mikacuy@stanford.edu
https://mikacuy.github.io

Education

Stanford University — **CA, USA**
Ph.D. Candidate in Computer Science — Sept 2019 – present
Advisor: Prof. Leonidas Guibas

National University of Singapore — **Singapore**
Master of Computing (Computer Science); CAP: 4.58/5.0 — Aug 2017-Jul 2018
Scholarship: NUS Graduate Scholarship for ASEAN Nationals (full masters scholarship)

Hong Kong University of Science and Technology — **Hong Kong**
BSc. in Mathematics and Computer Science — Sept 2013-Aug 2017
CGA: 3.84/4.3; CS CGA: 4.16/4.3; First Class Honors
Scholarship: HKSAR Government Targeted Scholarship (full 4-year university scholarship)

Publications

Point2Cyl: Reverse Engineering 3D Objects from Point Clouds to Extrusion Cylinders
Mikaela Angelina Uy[*], Yen-yu Chang[*], Minhyuk Sung, Purvi Goel, Joseph Lambourne, Tolga Birdal, Leonidas Guibas
Computer Vision and Pattern Recognition (**CVPR**), 2022.
Website: https://point2cyl.github.io

Joint Learning of 3D Shape Retrieval and Deformation
Mikaela Angelina Uy, Vladimir G. Kim, Minhyuk Sung, Noam Aigerman, Siddhartha Chaudhuri, Leonidas Guibas
Computer Vision and Pattern Recognition (**CVPR**), 2021.
Website: https://joint-retrieval-deformation.github.io

Deformation-Aware 3D Shape Embedding and Retrieval
Mikaela Angelina Uy, Jingwei Huang, Minhyuk Sung, Tolga Birdal, Leonidas Guibas
European Conference on Computer Vision (**ECCV**), 2020.
Website: https://deformscan2cad.github.io

LCD: Learned Cross-Domain Descriptors for 2D-3D Matching
Quang-Hieu Pham, **Mikaela Angelina Uy**, Binh-Son Hua, Duc Thanh Nguyen, Sai-Kit Yeung
AAAI Conference on Artificial Intelligence (**AAAI**), 2020. **Oral**
Website: https://hkust-vgd.github.io/lcd/

Revisiting Point Cloud Classification: A New Benchmark Dataset and Classification Model on Real-World Data
Mikaela Angelina Uy, Quang-Hieu Pham, Binh-Son Hua, Duc Thanh Nguyen, Sai-Kit Yeung
International Conference of Computer Vision (**ICCV**), 2019. **Oral**
Website: https://hkust-vgd.github.io/scanobjectnn/

PointNetVLAD: Deep Point Cloud Based Retrieval for Large-Scale Place Recognition
Mikaela Angelina Uy and Gim Hee Lee
Computer Vision and Pattern Recognition (**CVPR**), 2018.
Website: https://github.com/mikacuy/pointnetvlad.git

Work Experiences

Google — **Mountain View, USA**
Research Intern — Jun 2022-present

- Sparse, unconstrained NeRF reconstruction with ambiguity-aware depth estimates
- Mentors: Ke Li, Mirko Visontai

Mikaela Angelina Uy

Gates Computer Science, Rm 239
Stanford, CA 93405

Email: mikacuy@stanford.edu
https://mikacuy.github.io

Autodesk AI Lab — **San Francisco, USA (Remote)**
Research Intern — Jun 2021-Sept 2021
- Learning and understanding of 3D CAD and solid models
- Mentors: Joseph Lambourne

Adobe Research — **Seattle, USA (Remote)**
Research Intern — Jun 2020-Sept 2020
- 3D shape deformation techniques and parametric model understanding
- Mentors: Vladimir G. Kim, Minhyuk Sung, Noam Aigerman, Siddhartha Chaudhuri

Hong Kong University of Science and Technology — **Hong Kong**
Research Assistant — Sept 2018-Jun 2019
- 3D scene understanding and point cloud learning using deep learning techniques
- Supervisor: Prof. Sai-Kit Yeung

Teaching

Computer Graphics: Geometric Modeling/Processing (CS 348a) — Winter 2021
Teaching Assistant, Stanford
- Taught recitation class once a week, held office hours twice a week, and graded all exams, homeworks and projects in the class.

Introduction to Computer Science (COMP 1021) — **Hong Kong**
Lab Assistant, HKUST — Sept–Dec 2014
- Taught in lab sessions of the introductory class in Python.

Invited Talks

VinAI Seminar Series — July 22, 2022
Learning to Vary 3D Models for Universally Accessible 3D Content Creation

Brown Vision Computing Seminar — April 11, 2022
Learning to Vary 3D Models for Universally Accessible 3D Content Creation

Stanford G-Cafe — March 10, 2022
Point2Cyl: Reverse Engineering 3D Objects from Point Clouds to Extrusion Cylinders

Stanford CS 348n Guest Lecture — February 16, 2022
Neural Shape Variation and Generation

Selected Awards

School of Engineering Fellowship, *Stanford University* — 2019-2020
HKSAR Government Targeted Scholarship — 2013-2017
NUS Graduate Scholarship for ASEAN Nationals — 2017-2018
Epsilon Fund Award, *HKUST Mathematics Department* — 2017
Google Women Techmakers Scholarship; *Asia Pacific* — 2016
International Mathematical Olympiad (IMO) Bronze Medalist — 2012, 2013
Philippine Mathematical Olympiad 1st runner-up — 2012, 2013

Services

Reviewer: CVPR, ICCV, ECCV, SIGGRAPH, SIGGRAPH Asia, BMVC, 3DV, AAAI, TVCG

Volunteer Competitive Math Trainor
Trained the PH IMO Team ’17-’20; PH team leader for various elementary Math Olympiads

Mikaela Angelina Uy

Gates Computer Science, Rm 239
Stanford, CA 93405

Email: mikacuy@stanford.edu
https://mikacuy.github.io

Projects

Interpretable & Actionable Models using Attribute & Uncertainty Information Autumn 2019

- CS229 (Machine Learning) course project
- Deep-learning models can be difficult to understand and control intuitively due to the black-box nature of these models. However, such lack of interpretability and human actionability in the models' decision processes make it difficult to trust these models in critical applications that affect the lives of people. We propose to alleviate these problems through the use of attribute and uncertainty models in deep networks.

Master's Thesis Aug 2017–May 2018

- Posed the problem of place recognition as a point cloud retrieval problem using deep learning, leveraging on illumination and seasonal invariance of point clouds which is a known problem in image-based place recognition. (CVPR 2018 accepted paper)

Bachelor's Thesis (Underwater Robotics Vision) Jul 2016–May 2017

- Advised by Prof. Chi-Keung Tang
- Studied the performance of real-time object detection models, both using handcrafted features and deep learning networks, for underwater diver detection in robotics applications.

Smart Shirt & Smart App Oct-Nov 2015

- **First Runner-Up-** The Hong Kong Designathon 2015
- Developed a prototype of a smart shirt to detect human posture connected to an Android app.

HKUST Robotics Team, Remotely Operated Vehicle (ROV) Sub team
Software Engineer Dec 2014- Dec 2015

- **Overall 3rd Place** (Explorer Class) – 14th Annual MATE International Underwater Robotics Competition in *St John's, Newfoundland and Labrador, Canada*
- **Asia Champion** in 2015 MATE Asia Regional Underwater Robotics Competition
- Built the main control software of the ROV and Qt GUI's for the competition runs.
- The team was composed of 15 engineers who built and designed the ROV from scratch

Technical Skills Python, C/C++, Unix, Tensorflow, Pytorch, MATLAB, OpenCV, ROS, microcontroller programming

Sports HKUST Women's Football Team Member; Frisbee; Scuba Diving

Languages **Native**: English, Filipino, Hokkien; **Proficient**: Mandarin